

Appln. No. 10/710,130
Docket No. 146903 / CBM-0134

REMARKS / ARGUMENTS

Status of the Claims

Claims 1-31 are pending in the application. Claims 1-15, 21-23 and 28-31 stand rejected. Claims 16-20 and 24-27 are withdrawn from consideration pursuant to 37 CFR 1.142(b), as being drawn to a non-elected claimed species. Applicant has canceled Claims 8 and 22, amended Claims 1 and 21, and added new Claim 32, leaving Claims 1-7, 9-15, 21, 23 and 28-32 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §103(a)

Claims 1-13, 15 and 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Aoki et al. (U.S. Published Application No. 2004/0246083, hereinafter Aoki '083) in view of Abele et al. (U.S. Patent No. 5,475,355, hereinafter Abele).

Claims 28-31 stand rejected under 35 U.S.C. 103(a) as being upatentable over Aoki et al, as modified, as applied to claim 1 above, and further in view of Aoki et al. (U.S. Patent No. 6,275,128 hereinafter Aoki '128).

Claim 14 stands rejected under 35 U.S.C. 103(a) as being upatentable over Aoki et al, as modified, as applied to claim 1 above, and further in view of Aoki et al. (U.S. Patent No. 6,794,973 hereinafter Aoki '973).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of

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establishing that all elements of the invention are taught or suggested in the prior art.
MPEP §2143.03.

Regarding Claims 1-13, 15 and 21-23

Applicant has amended independent Claim 1 to include the limitations of Claim 8, and has amended independent Claim 21 to include the limitations of Claim 22. Claims 8 and 22 have been canceled.

Accordingly, independent Claims 1 and 21 now include the limitation of a permanent magnet shim disposed at an opposite side of the layer to the PM arrangement.

Independent Claim 21 includes the additional limitation of the shim comprising a first shim having a polarity the same as that of the permanent magnet and a second shim having a polarity different from that of the permanent magnet.

Dependent claims inherit all of the limitations of the respective parent claim.

In alleging obviousness, The Examiner alleges that Aoki '083 discloses the use of a permanent magnetic shim [32, 40, figure 2] disposed opposing the layer [26]. Paper 060805, page 3 (referencing Claims 8-11).

In respectful disagreement with the Examiner, Applicant finds Aoki '083 to teach a base plate (26) having an annular projection (32) made of iron (*not* permanent magnet) disposed on a side of layer (26) opposing magnets (24), and a magnet (40) mounted on magnets (24) and mounted on outside perimeter edges of plate (26) and projection (32) (*not* mounted on a side of plate 26 opposing magnets 24). Paragraph [0043] and Figure 2.

As such, Applicant submits that Aoki '083 does not teach or suggest "...a layer comprising a ferromagnetic material securely disposed at one of the surfaces of the PM arrangement; *and at least one permanent magnet shim disposed at an opposite side of the layer to the PM arrangement*," which is specifically claimed for in the instant invention, and that Abele fails to cure this deficiency.

Regarding Claims 28-31

The Examiner applies Aoki '083 and Aoki '128 to allege obviousness.

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Applicant respectfully disagrees that the combination of references teaches each and every element of the invention.

Claim 28 recites, inter alia,

"...a non-ferromagnetic shim plate having a plurality of pockets, the shim plate disposed at the surface of the permanent magnet;

a transition layer comprising a ferromagnetic material securely disposed at one or more of the pockets of the shim plate; and

a permanent magnet shim disposed at an opposite side of the layer to the permanent magnet...".

For at least the reasons set forth above, Applicant submits that Aoki '083 does not teach or suggest *a permanent magnet shim disposed at an opposite side of the layer to the permanent magnet*, and submits that Aoki '128 fails to cure this deficiency.

Furthermore, the Examiner alleges that Aoki '128 discloses a magnetic field generating device [figure 1] having a non-ferromagnetic shim plate [13] with a plurality of pockets [12] accommodating magnetic shims [15] integrally formed with a *ferromagnetic plate [11]*. Paper 060805, page 5 (emphasis added).

In respectful disagreement with the Examiner, Applicant finds Aoki '128 to disclose the shim holder (10) consisting of a three-layer, *non-magnetic*, thin disk, as shown in Figure 2, having a base disk (11), a holder disk (12), and a cover disk (14). Accordingly, and contrary to the Examiner's allegation, all three disks (11, 12 and 14) are disclosed to be *non-magnetic*.

As best understood by Applicant, it appears that the Examiner is equating the base disk (11) of Aoki '128 with the ferromagnetic transition layer of the instant invention. However, as disclosed in Aoki '128, base disk (11) is non-magnetic, not ferromagnetic as claimed in the instant invention.

As such, Applicant submits that Aoki '083 does not teach or suggest *a permanent magnet shim disposed at an opposite side of the layer to the permanent magnet*, that Aoki '128 fails to cure this deficiency, and that Aoki '128 does not teach or suggest *a transition layer comprising a ferromagnetic material securely disposed at one or more*

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of the pockets of the shim plate, which are specifically claimed for in the instant invention.

Regarding Claim 14

The Examiner applies Aoki '083 and Aoki '973 to allege obviousness.

Claim 14 depends from Claim 1, and for all the reasons set forth above, Applicant submits that Claim 1 is allowable over Aoki '083, that Aoki '973 fails to cure the deficiencies of Aoki '083, and that therefore Claim 14 is also allowable.

Additionally, Applicant respectfully submits that a *prima facie* case of obviousness may be rebutted "where the results of optimizing a variable, which was known to be result effective, [are] unexpectedly good." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (citing *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8-9 (CCPA 1977)).

On page 3 of the instant office action, the Examiner cites *In re Boesch* in an effort to support the contention that discovering an optimum value of a result effective variable involves only routine skill in the art.

While Applicant appreciates that "discovery of an optimum value of a result effective variable in a known process is *ordinarily* within the skill of the art", Applicant respectfully submits that *In re Boesch* also supports a rebuttal of obviousness by upholding the notion that "It is well settled that a *prima facie* case of obviousness may be rebutted 'where the results of optimizing a variable, which was known to be result effective, [are] *unexpectedly good*.'" *In re Boesch*, 617 F.2d 272, 205 USPQ 215 at 219 (CCPA 1980) (*emphasis added*).

Claims 1-7, 21 and 28, recite a layer/transition layer having a defined thickness.

At Paragraph [0025] of the instant application, Applicant describes the *unexpectedly good results* of a layer 135 having a thickness sized to permit local reversal of the magnetization between permanent magnet arrangement 105 and shim 140, 145 without shifting the magnetic field at layer 135, thereby making it possible to control the B0 field of device 100 to within less than or equal to 1 Gauss from a target value.

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At Paragraph [0026] of the instant application, Applicant describes the ***unexpectedly good results*** of being able to effectively convert a permanent magnet design absent a poleface into a design that possesses properties of a permanent magnet having a poleface.

The Examiner has not cited any prior art reference to support the allegation that such unexpectedly good results are obvious, and in view of the holding in *In re Boesch*, Applicant submits that *In re Boesch* supports a rebuttal of a finding of obviousness.

In comparing the cited prior art references with the instant invention, Applicant finds the references to be absent any concern relating to a ferromagnetic transition layer having a thickness sized to permit local magnetization reversal without shifting the magnetic field at the layer.

In view of the foregoing, Applicant submits that the cited prior art does not teach, suggest or motivate one skilled in the art to arrive at the claimed invention having the unexpected results as claimed, and that *In re Boesch* supports a rebuttal of a finding of obviousness.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Applicant further submits that *In re Boesch* supports a rebuttal of a finding of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

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Regarding New Claim 32

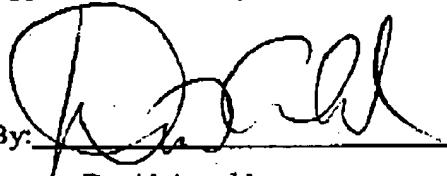
Applicant has added new Claim 32, which depends from Claim 1 and includes additional limitations that further describe an embodiment of the invention. No new matter has been added as antecedent support may be found in the application as originally filed, such as at Paragraph [0025] for example.

In view of the remarks set forth above regarding the allowability of Claim 1, Applicant submits that new Claim 32 is also allowable, and respectfully requests entry and notice of allowance thereof.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,
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